

**APPLICATION**

**of**

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**for**

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**on**

**LASER BEAM TOY AND MORE**

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# **LASER BEAM TOY AND MORE**

## **BACKGROUND OF THE INVENTION**

### **Field of the Invention**

The present invention relates to the field of recreation and physical fitness, to a high tech. device that allows participants the activity like jumping "rope", "limbo" game, "Tennis Laser", or to play a table game of "interfere the beams" in the absence of other individuals if they so desire. The present invention, in its other embodiments, relates to transportation safety related utilities, to a laser beam based device that allows controlling the traffic signal by using the laser beam sensors and allowing to estimate the distance to the vehicle in front of a user and transferring it to electro-mechanical solenoid or mini-motor movement that stops user's vehicle. Additional embodiment can be used to stop the public at the exact location, with optional alarm system. Another embodiment is to guide the public by showing laser path to be followed, which the direction can be changed by usage of mirrors in the corners at 45 degrees. Another embodiment can be used to attract attention to event locations, by shooting two rotating beam to the sky.

### Description of the Related Art

The systems and the methods of the present invention are particularly useful for enabling users to play a group or individually Laser Beam based fitness or recreational games while having full control over the difficulty level as well the system is useful to control a traffic signal and safety feature in the car.

A variety of systems and methods have been developed over the years for providing alternatives to individuals for a group fitness and recreational activities which typically include robust to assemble and not easily portable devices that usually require to be connected to the electrical power, which limits the location of the device and introduce a safety issue to the participants. These systems usually include rotating and other mechanically moving parts which creates a serious safety issues, especially to young participants.

It would be desirable to provide a laser beam based portable device, which will be more efficient, and more enjoyable and will have increased usability, which can be readily assembled and disassembled with modular sections for enhanced expandability, and traffic and safety related features based on the laser beam sensors transferring the signals to electro-mechanically activated solenoids or mini-motors.

The system and the methods of the present invention are particularly useful for enabling safe, portable, efficient and effective and more enjoyable laser beam based activities, for groups and individuals, the system also useful for traffic and vehicles safety features where laser beam sensors are required.

Therefore, the present invention provides improved systems and methods for providing an efficient and effective laser beam based fitness and recreational activities as well as traffic and vehicle safety features. The inventions disclosed herein satisfy these and other needs, still further objects and advantages of these inventions will become apparent from a consideration of the drawing and ensuing description.

## **SUMMARY OF THE INVENTION**

Briefly and in general terms, the present invention provides a new and improved system and method for providing the user safe, practical, portable and very enjoyable Laser Beam based activities for groups and individuals that can be played in house and outside as well. In its other embodiments the system is used as traffic and vehicle safety control where laser beam sensors can be used.

More particularly, for example, in an embodiment of the present invention, a laser beam system is provided for enabling a user safe, portable and enjoyable laser beam activities for individuals and groups as well. In one embodiment, the system includes conventional laser beam device with built in control for manually changing the beam rotating cycle frequency and ability to count and reset the counter of the failing players (the once that beam hits during the activity). Further, the system includes telescopic vertical measurement pole manually adjustable to any height based on the required difficulty level of the activity. The system also includes a beeper that alerts the user on the start of the activity and the buzzer that alerts the user when he interferes the laser beam (can be defined as a failure in one type of activity or success in another, depend on the predefined rules of that activity). In the second embodiment, the system is placed inside the rotating stability based and by rotating the laser device the system provides different, but yet laser beam based, type of enjoyable fitness and recreation activity. The system with the rotating base can be placed on the ground, at the center of the players circle so the players can jump over the rotating laser beam. The second embodiment also can be elevated on top of the table so the players seating around the table must skip the first and interfere the second laser beam, when the beams is passing over their heads, by raising their hands.

In additional embodiments of the present invention laser beam based sensors can be used to control the traffic signal, more specifically changing the traffic signal by sensing existence of people waiting across the street, laser beam sensor can be used to estimate the distance between the vehicle in front and if the distance is below the predefined one then electro-mechanical solenoid or mini-motor will stop the car using existing breaks system.

The above objects and advantages of the present invention, as well as others, are described in greater details in the following description, when taken in conjunction with the accompanying drawing of illustrative embodiments.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a perspective view of preferred embodiment of a Laser Beam Toy.

FIG. 2 is a perspective view of the rotating base which is used in second embodiment.

FIG. 3 is a perspective view of preferred embodiment inside the rotating base tilted and supported by the foldable legs attached to the rotating base.

FIG. 4 is a perspective view of another embodiment which is used to stop a car based on the distance of the vehicle in front.

## **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

The present invention is directed to an improved system and method for providing a user safe and portable laser beam based device in fitness and recreational fields for individuals and groups activities in house and outside, it even can be set as a seating activity, by placing the laser device on the table. The system doesn't have any mechanically rotating or moving parts and it doesn't require connection to electrical power. The system is easily assembled and moved from place to place to provide very enjoyable recreation activity. The system in its other embodiments is directed to an improved methods of laser beam sensors safety features, like changing the traffic signal by sensing and counting waiting people, stopping the car by sensing that the vehicle in front is less than predefined distance. The preferred and other embodiments of the improved system and method are fully and detailed illustrated and described in the following paragraphs.

In the drawing, wherein like reference numerals denote like or corresponding parts throughout the drawing figures, and particularly in the preferred embodiments in accordance with the invention as shown in FIGS. 1, 2 and 3, for example, a systems **10**, **12** and **14** is provided for safe, efficient, portable and very enjoyable laser beam based fitness and recreational activities for individuals and groups while providing full control over the frequency of the laser beam cycles to increase the difficulty level of the activity, constituting a Laser Beam Toys. In its other embodiments as shown in FIG. 4, for example, a system **16** is provided to sense the distance to the vehicle in front and to activate electro-mechanical solenoid or mini-motor connected to car's breaks system and by that to stop the car.



As illustrated in FIGS. 1, in a preferred embodiment in accordance with the present invention, for example, the system 10 comprises the laser device body 20 with the built in counter 24 to display of successful jumps, beeper 28 which alerts on the start of the activity, buzzer 26 which goes off on laser beam hit. The system 10 further comprises activation switch 42 for single or multiple laser beams to be used in the provided activity, laser beam cycle frequency control 44, restart or reset the activity and the counter display push button 46, ON/OFF switch 45. The body 20 has built in space 36 for the conventional battery. The system 10 further includes telescopic vertical poll 30 which connected to the body 20 by the poll holder 34. Two slidable laser beam bases 22, which include the laser beam eye 32 that can be adjusted to any angle, are placed on the vertical poll 30. The wire 40 provides the connection between the electrical board and the laser beam angle adjustable eyes 32 through holes 38 in the body 20.

As illustrated in FIG. 2, in a second embodiment in accordance with the present invention, the system 12 comprises a disk like rotating body 52 which is attached to the stability base 50. The disk body 52 has a built in cavity 54 to hold the laser beam system and rotating security bracket 56 to secure the laser beam system when it is inserted into the matching cavity 54.

As illustrated in FIG. 3, laser beam device, system 10, is placed inside the rotating base, system 12, its tilted and supported by multiple foldable legs 60.

As illustrated in FIG. 4, system 16 comprises the sensor control box 74, that include electronic board 76, wire 72 connecting electronic board 76 and the laser eye 70, wire 78 connecting electronic board 76 and electro-mechanical solenoid or mini-motor 82. Electro-mechanical solenoid or mini-motor 82 is attached to the vehicle by built in plate 80, screw 84, which is attached to the end of the solenoid 82, is provided to control the pressure on the breaks system.

Referring to FIG. 1, in a method for the use of a preferred embodiment in accordance with the present invention, for example, the system **10** enables a user to participate in a laser beam based fitness or recreational activities by shooting periodic laser beams. The system **10** has a manually operated ON/OFF switch **45**, comfortably located on the top of the device body **20**, activity restart push button **46** resets the activity to its initial state and digital counter **24**, multiple laser eyes switch **42** defined how many laser eyes will be used in the activity, laser beam cycle frequency control **44**, to adjust the difficulty level of the activity for increased challenge. The system **10** further includes built in electronic beeper **28** which alerts the participants on the start of the activity, so they can prepare them self to be ready, built in electronic buzzer **26** alerts the user when he interfere the laser beam.

The laser beam device body **20** has a build in battery place **36**. Telescopic vertical measurement poll **30**, which the high of can be vertically adjusted depends on the type of the activity, is attached to the body **20** by the poll holder **34**. Laser beam bases **22**, that include adjustable to any angle laser eyes **32**, are located on the vertical poll **30** can be manually slidably adjusted to required height, based on the poll's **30** measurement marks. The wire **40** is connected between the battery and the laser beam bases through device body **20** holes **38**.

Referring to FIG. 2, in a method for the use of a second embodiment in accordance with the present invention, the system **12** provides a disk like rotating body **52** which is attached to the stability base **50**. System **12** is used when the participants require rotating laser beam activity on the ground or elevated surface like a table or so. System **12** has a built in matching cavity **54** so the laser beam system **10** can be placed tightly into it and the rotating security bracket **56** to secure the laser device system **10** especially the rotating base **52** is tilted, best shown in FIG. 3. Rotating base **52** is electronically rotating, while the stability base **50** is not, about its horizontal axis and by that it rotates the laser beam devise.

Referring to FIG. 3, in a method for the use of another embodiment in accordance with the present invention, the system 14, which is tilted and supported by foldable legs 60, provides to mark the location of the event, by shooting two laser beams to the sky creating two circles while the source of it marks the location. Laser eyes can be adjusted to any angle and that can achieve different shapes and different diameters of the circles. System 14 is used as a recreational activity so the players must walk thru between two laser beams without interfering any of the laser beams.

Referring to FIG. 4, in a method for the use of another embodiment in accordance with the present invention, the system 16, is adjusted to predefined safety distance, so when laser eye 70, which is located at the front bumper, is sense that the distance to the front vehicle is less than safety distance the proper signal is sent to the electronic control board 76 and from that to the electro-mechanical solenoid or mini-motor 82, which in turn apply pressure on the breaks system and by that stopping the car. The system 16, can include multiple laser eyes, that each of them defined to the same or different sensing distance. Multiple laser eyes that defined to the same distance are used to be placed at the front of the car to cover wider area. Multiple laser eyes that defined to different distance can serve for different timing signals to the electro-mechanical solenoid or mini-motor 82 to apply the pressure to the breaks system at different time for smooth stopping of the car.

In view of the above, it is apparent that the system and method of the preferred embodiments of the present invention enhance substantially the practicality and effectiveness of enabling a user laser beam based fitness and recreational activity. The system and the method further enable difficulty level adjustability and successful laser beam digital counting. Another embodiment of the present invention presents laser beam based sensor is used for traffic signal control and in the vehicle as a safety feature.

While the present invention has been described in connection with the specific embodiments identified herein, it will be apparent to those skilled in the art that many alternatives, modifications and variations are possible in light of the above description. Accordingly, the invention is intended to embrace all such alternatives, modifications and variations as may fall within the spirit and scope of the invention disclosed herein.